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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,173	01/23/2004	Dirk Schwingel	20020/10019	7870

7590 08/24/2005

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EXAMINER

MAI, NGOCLAN THI

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/764,173

Applicant(s)

SCHWINGEL ET AL.

Examiner

Ngoclan T. Mai

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 10-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 6-9 is/are rejected.
- 7) ☒ Claim(s) 3 and 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Claims 10-22 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on May 31, 2005.
2. Applicant's election with traverse of species a) which reads on claims 1-9 in the reply filed on May 31, 2005 is acknowledged. The traversal is on the ground(s) that there is no serious burden for the examiner to examine the species b) claims 10-22 along with elected species a). This is not found persuasive because in examining two different patentable distinct species together, different searches and examination must be made thus create burden to the examiner.

The requirement is still deemed proper and is therefore made FINAL.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 4, 6, 7, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huskamp et al. (US Patent No. 5,972,521) in view of Baumeister et al. (US Patent No. 5,151,246).

Huskamp et al disclose a method for making expanded metal structure (**10**) (see Figure 1), which comprises:

filling metal core material (**13**) in a metal shell (**12**) (col. 3, lines 35-39),

removing, under vacuum, air and moisture from the metal core to preventing air and moisture from reacting with the metal core material (**13**) (col. 4, lines 28-32),

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filling the shell (**12**) with an expandable gas (col. 4, lines 32-33), and consolidating the shell (**12**) and the core material (**13**) using heat and pressure (for claim 4) (col. 4, lines 58-61). Note that the claimed compacting and metallically joining the core layer to the oxide-free cover layer as currently cast can be done simultaneously, which is read on the consolidating step of the reference. Also note that the removal of air and moisture of metal core in the shell inherently subjects the shell, which reads on the oxide-free cover layer, to vacuum pressure.

The difference between claim 1 and Huskamp et al is that Huskamp et al do not specifically teach using the expanding agent in powder form.

However it is known in the art that expanding agent can be in the form of powder, which is a gas precursor and which upon heating at high temperature decomposes into gas and forming void between metallic powder, see Baumeister et al. col. 1, lines 12-38. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the expandable gas taught by Huskamp et al with gas-forming agent in powder form to be mixed with the metallic powder as taught by Baumeister et al. since expanding powder are known to be used to make expanded structure material.

Regarding claim 6, Huskamp et al. disclose the claimed recitation in co. 5, lines 27-49 and col. 5, line 66 to col. 6, lines 12.

Regarding claim 7, Huskamp et al disclose the claimed limitations in col. 7, lines 8-12.

As for claim 9 Huskamp et al teach the metal shell and the metal core can be aluminum and aluminum alloy, col. 3, lines 57-64. Baumeister et al teach that employing expanding agent in the amount of 0.2 to 1% by weight is sufficient to make expanded structure. Since it is known and obvious in view of Baumeister et al to use expanding agent in powder form for making the expanded structure of Huskamp et al. as noted above, it would also be obvious to one skilled in the art to employ expanding powder in the claimed amount because employing this amount is taught to be sufficient to make expanded metal structure as taught by Baumeister et al


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5. Claims 3 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoclan T. Mai whose telephone number is (571) 272-1246. The examiner can normally be reached on 9:30-6:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Ngoclan T. Mai  
Primary Examiner  
Art Unit 1742

n.m.